

FIG. 1

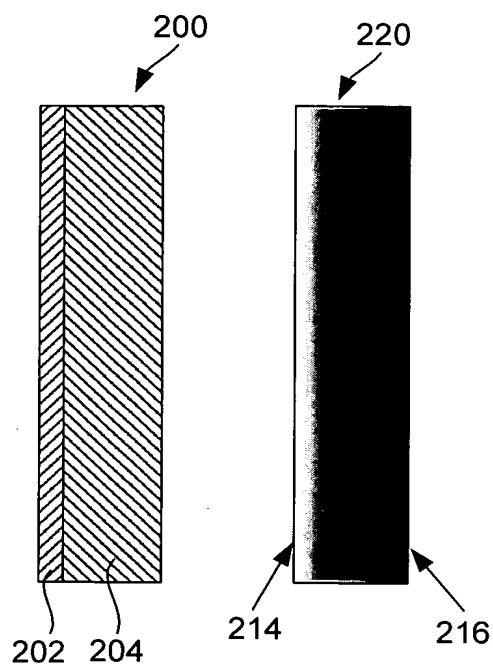


FIG. 2A FIG. 2B

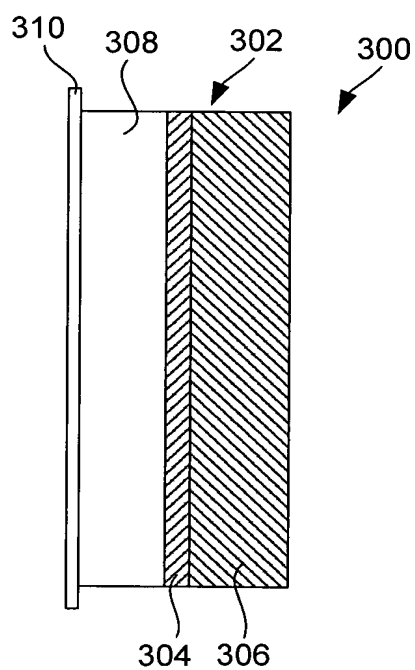


FIG. 3A

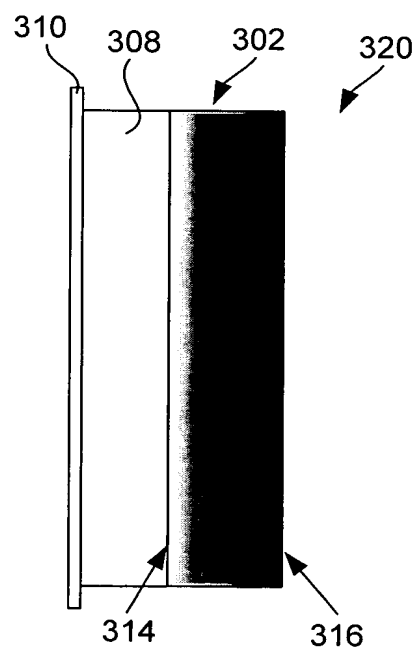


FIG. 3B

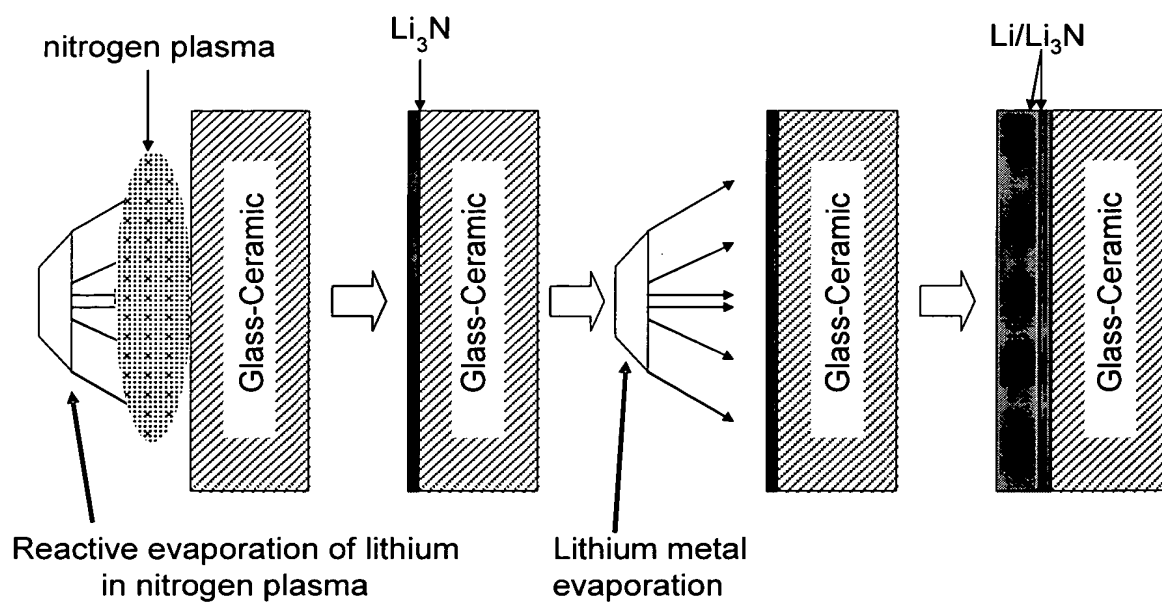


FIG. 4A

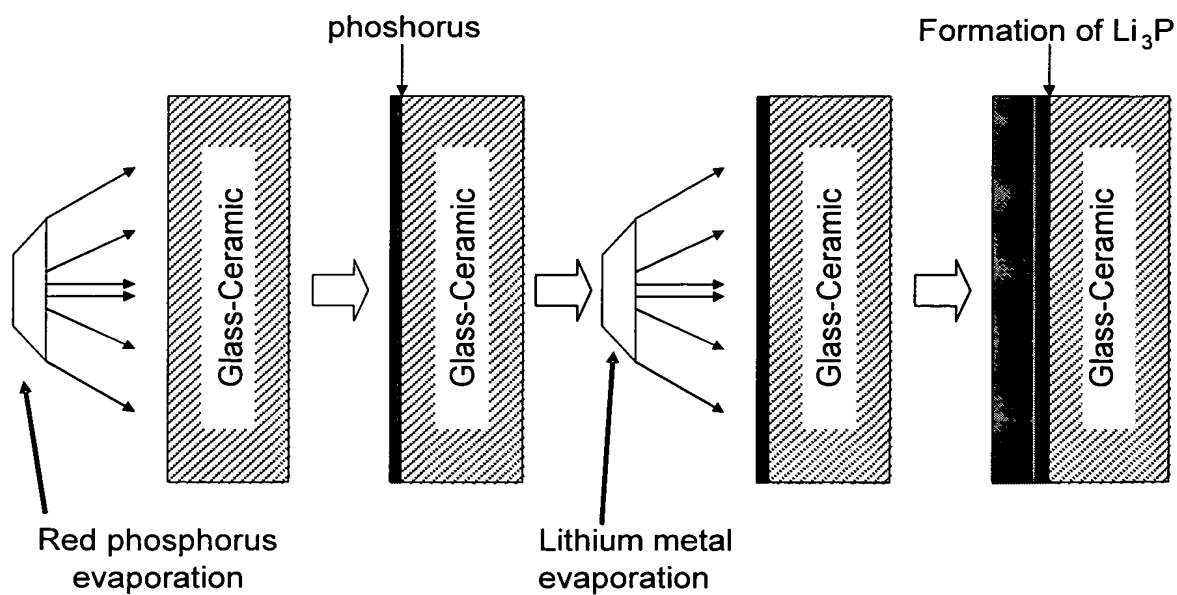


FIG. 4B

Plasma spray, Physical Vapor Deposition, etc.

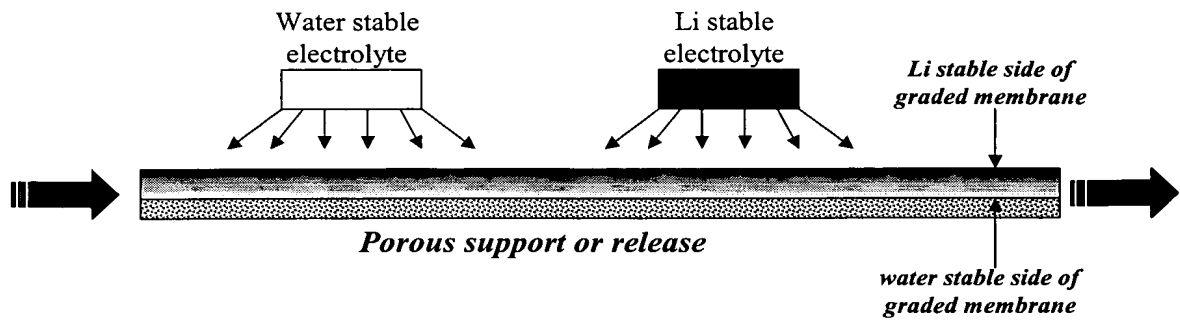


FIG. 5

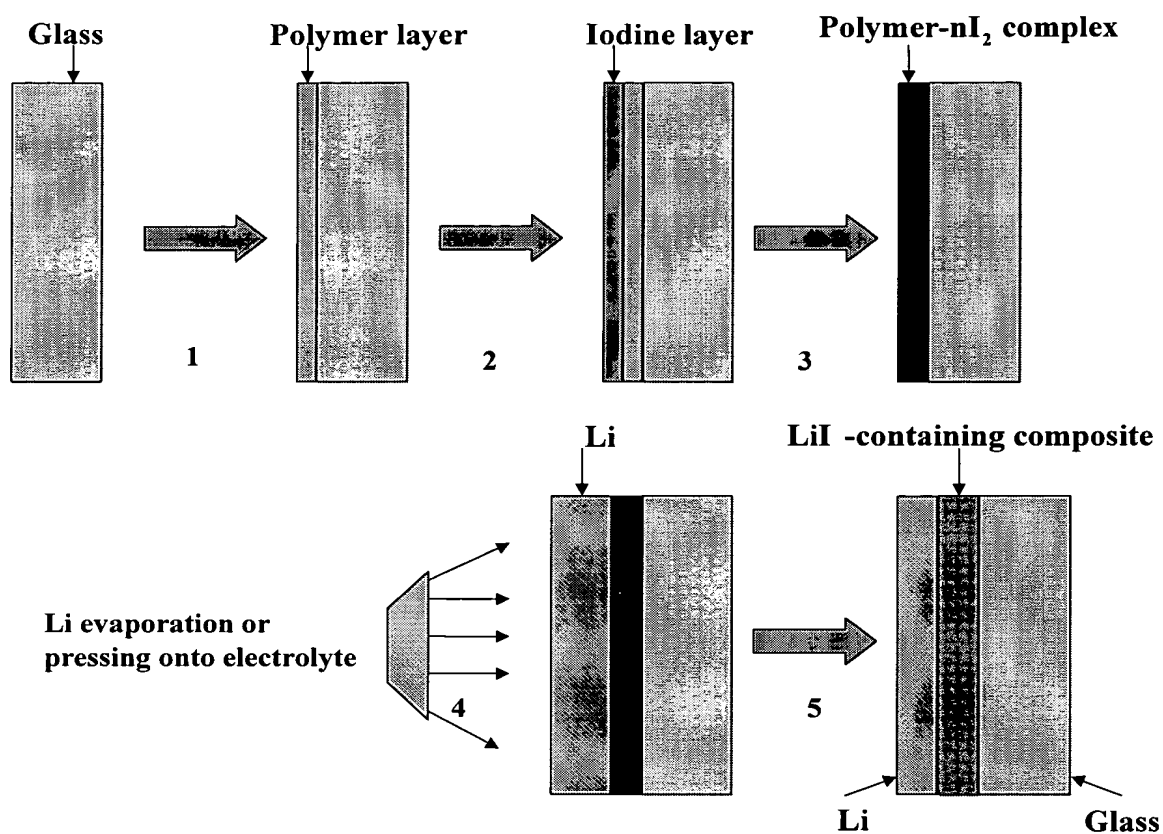


FIG. 6A

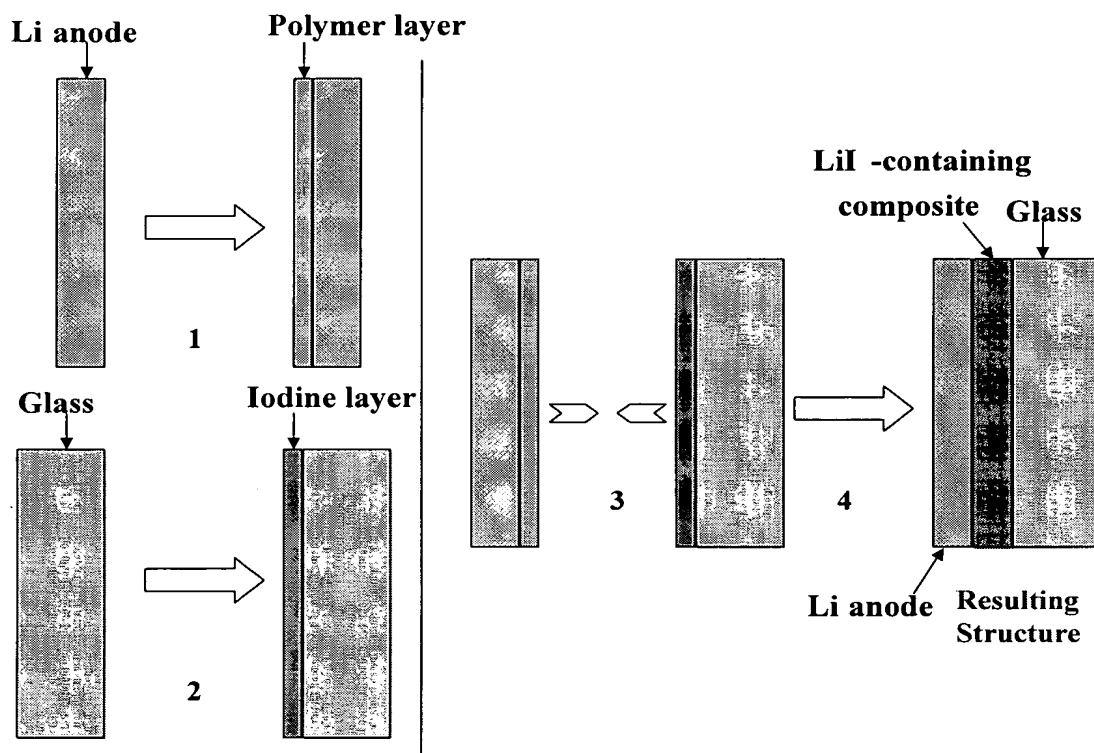


FIG. 6B

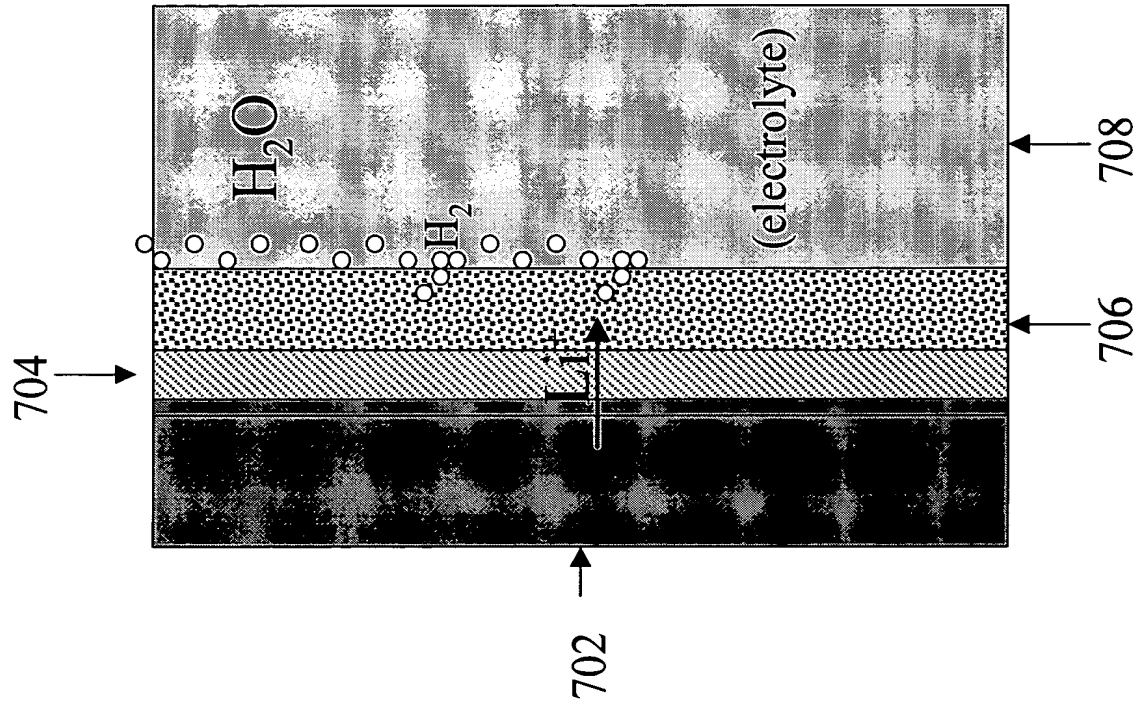


FIG. 7

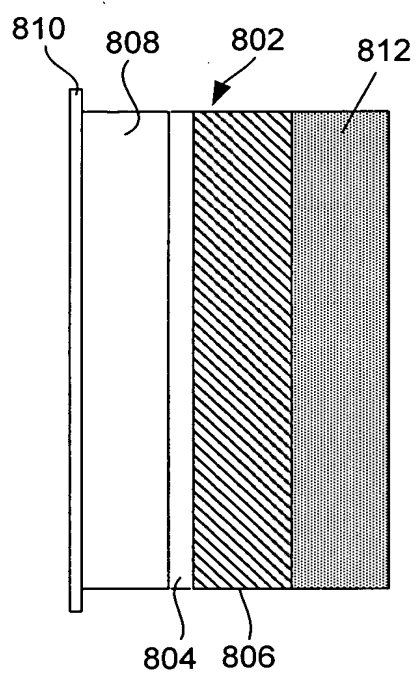


FIG. 8

Lithium/Metal Hydride Battery

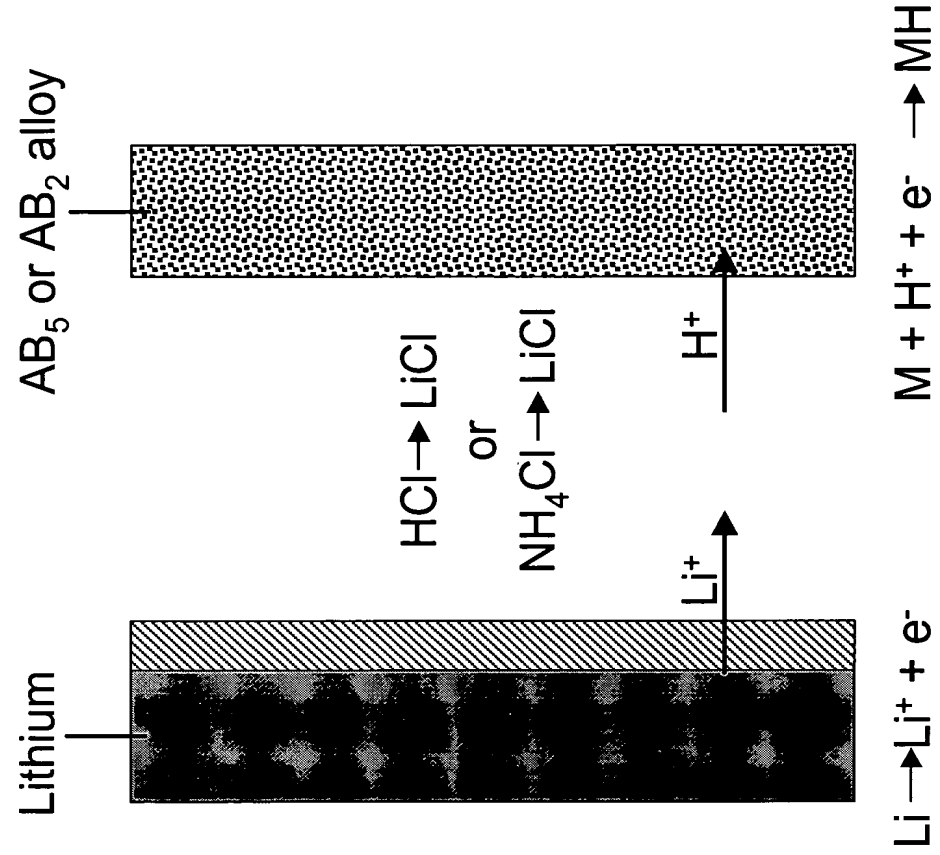
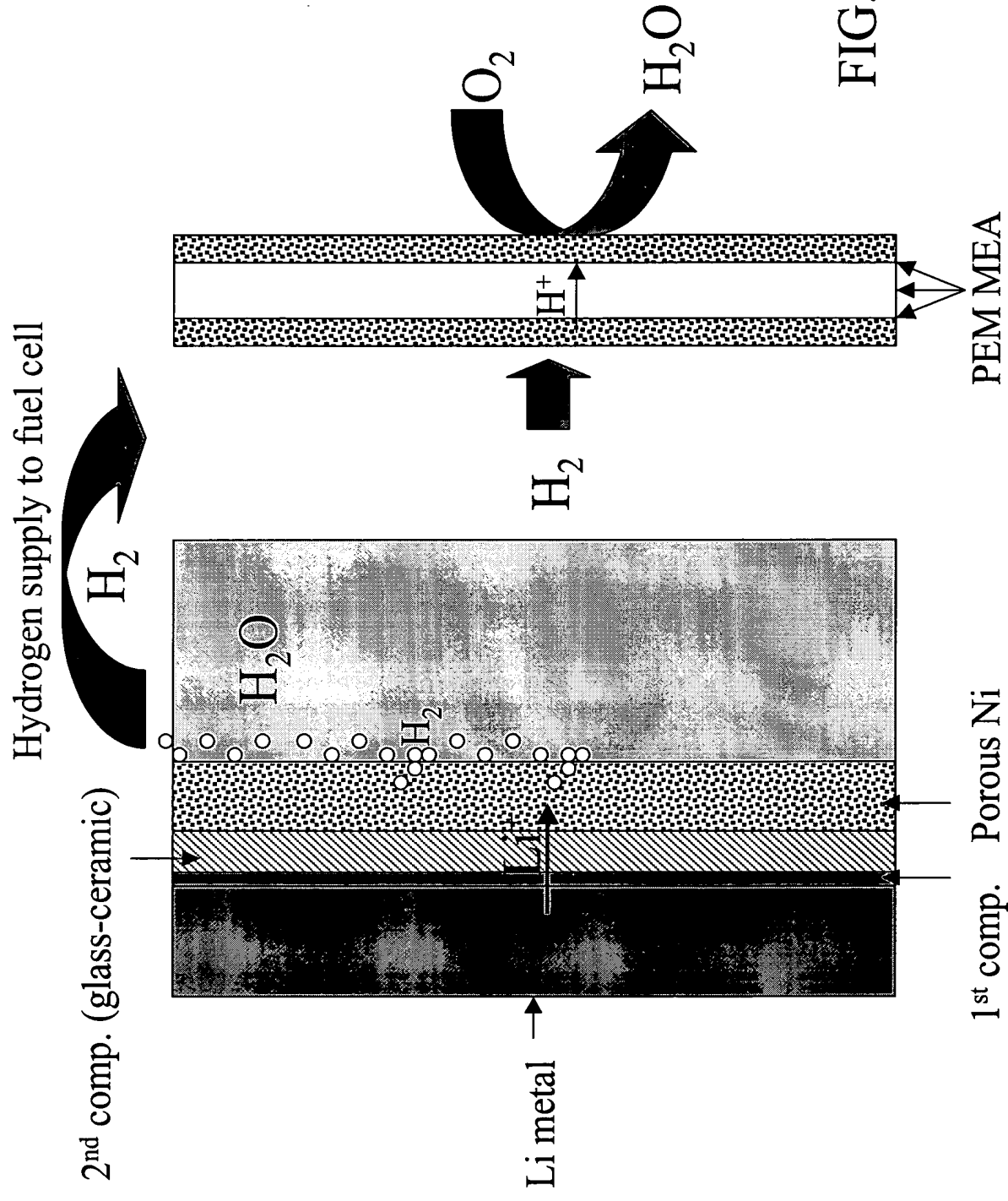


FIG. 9

Li/water Battery and Hydrogen Generator for Fuel Cell



Fabrication of thin, Li^+ conducting glass film on porous support

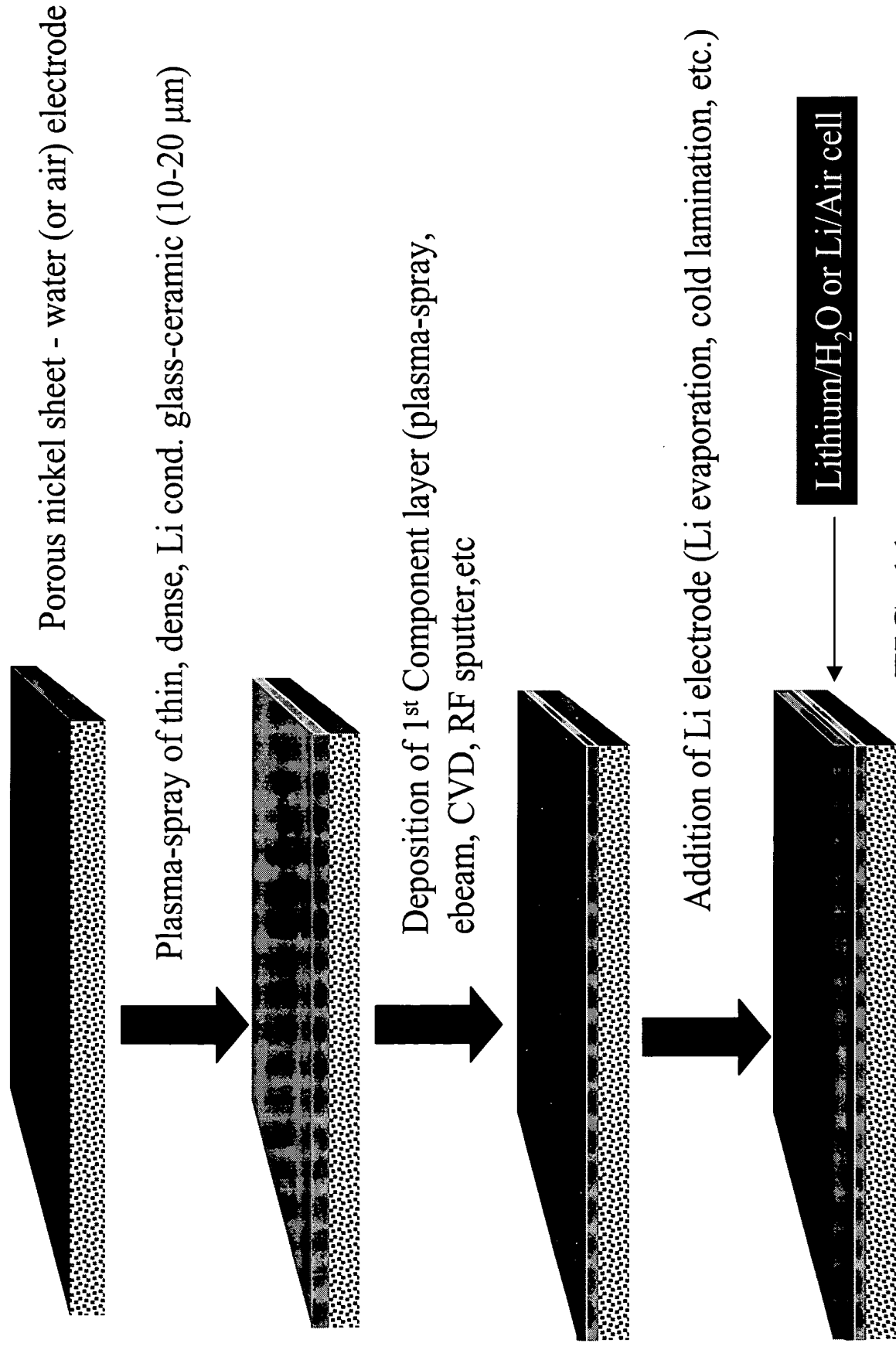
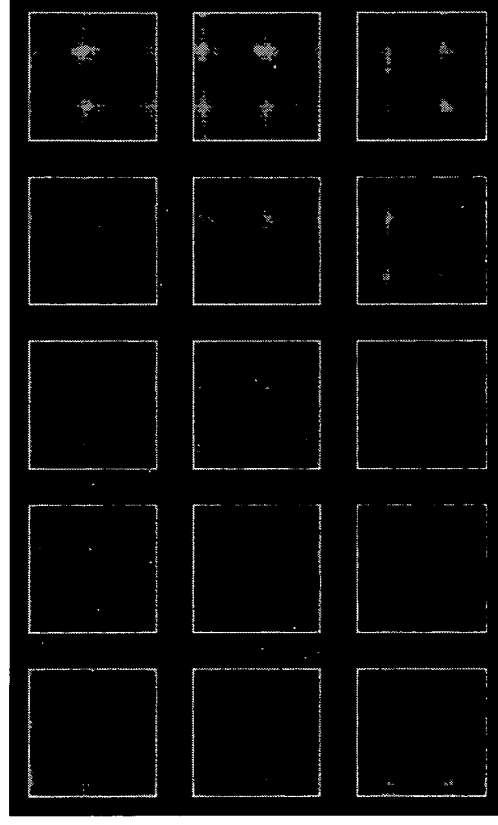
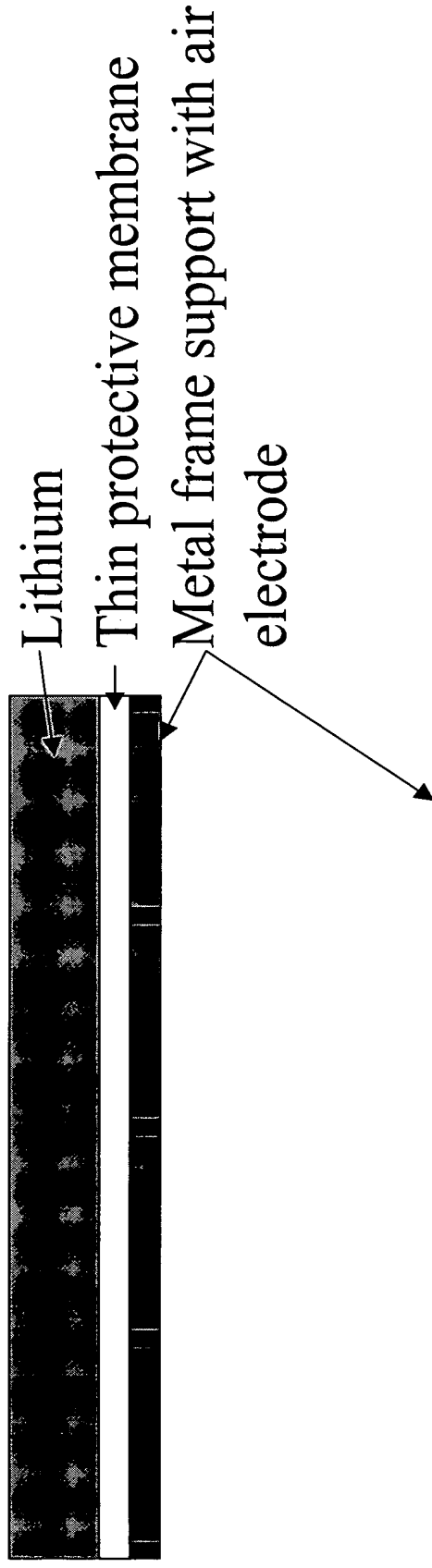


FIG. 11

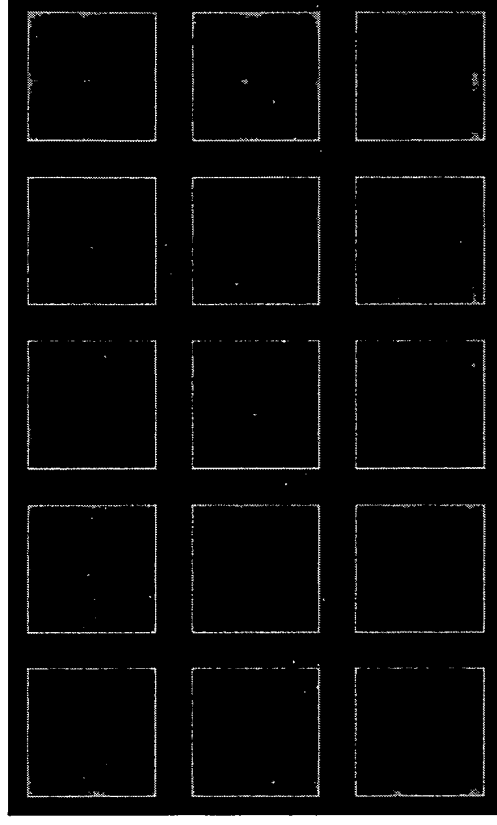
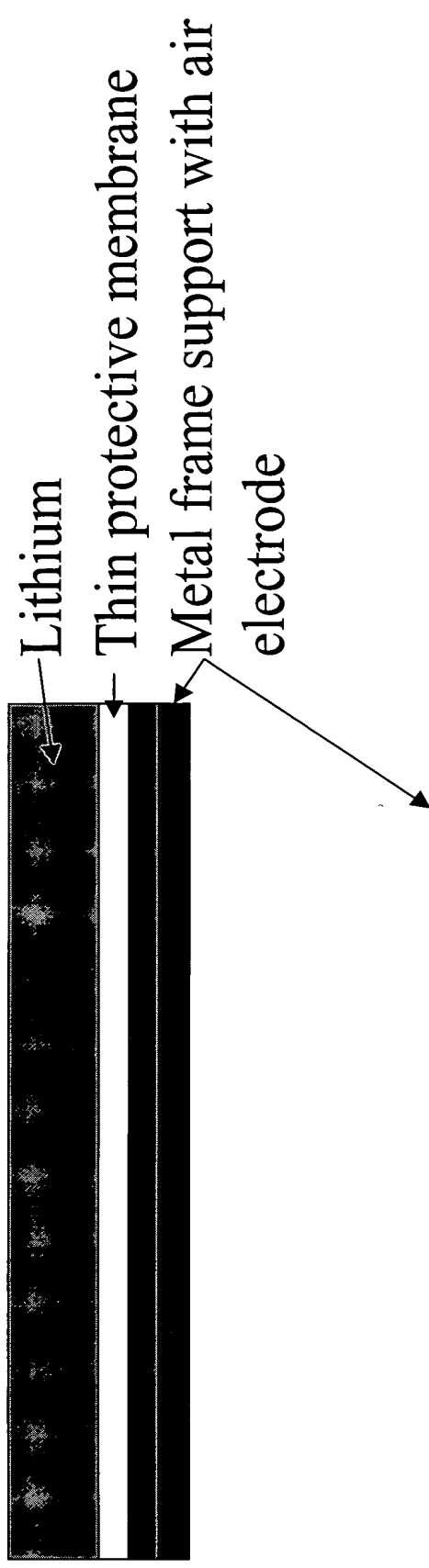
Side view



Bottom view

Figs.12A-B

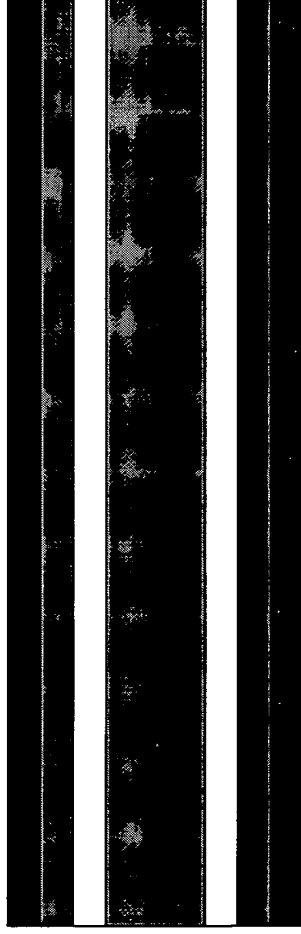
Side view



Bottom view

Figs.12C-D

Side view



Li/water or Li/air bilayer structure

Fig. 12E

Use of elastomeric seals to create flexible glass array

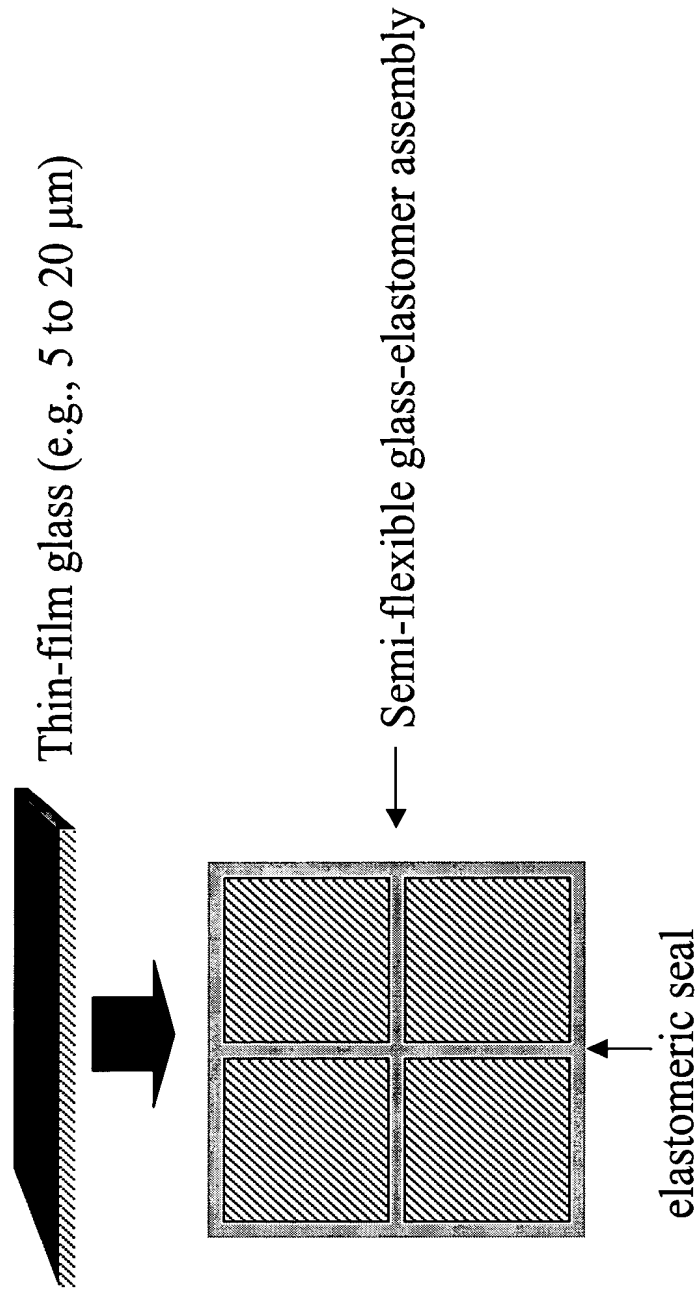


FIG. 13

Tubular Li-water or Li-air cell

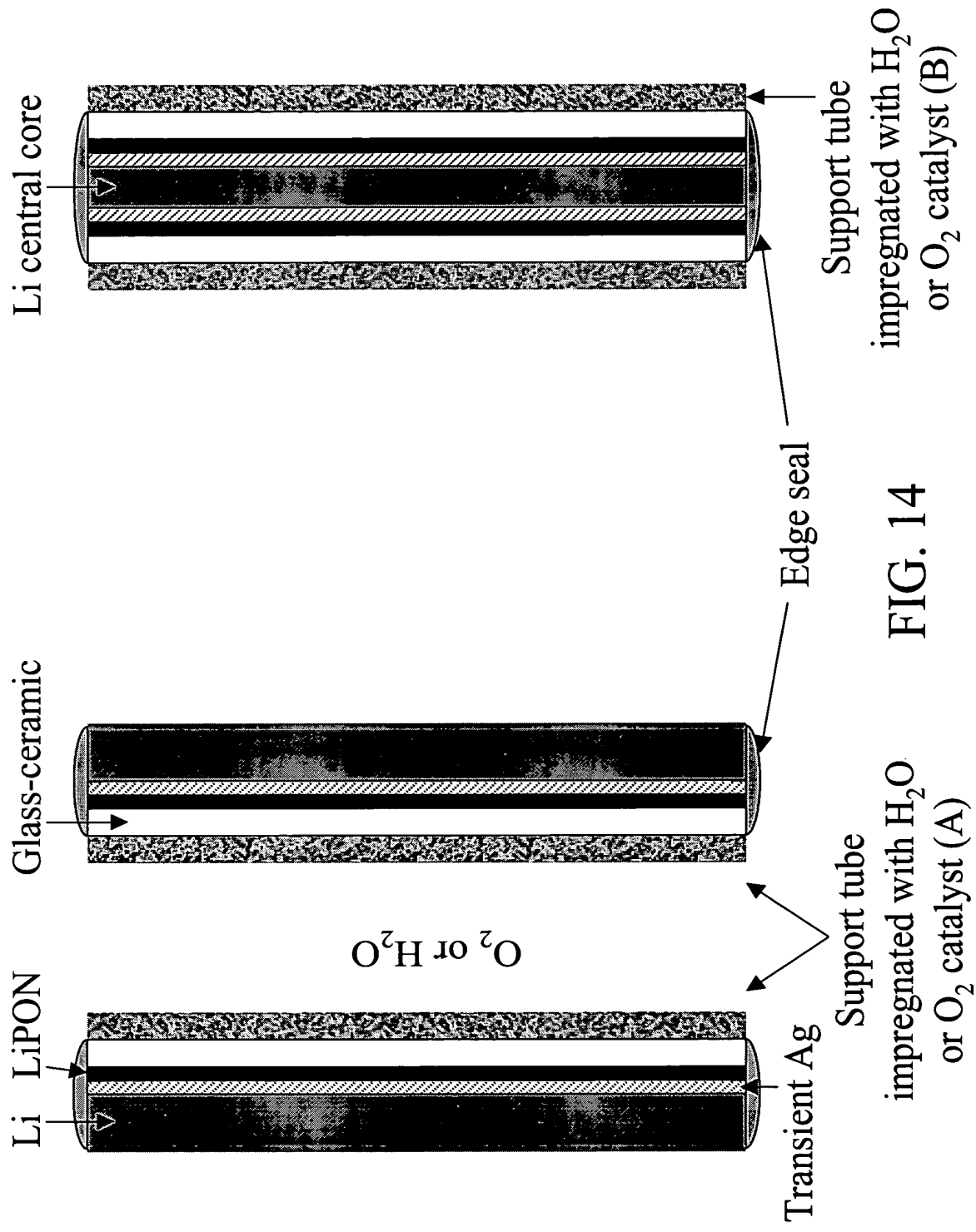


FIG. 14

Use of thin-walled hollow glass fibers for Protected Li

Li → 

Transient Ag/LiPON/Glass-ceramic tube

Current collector

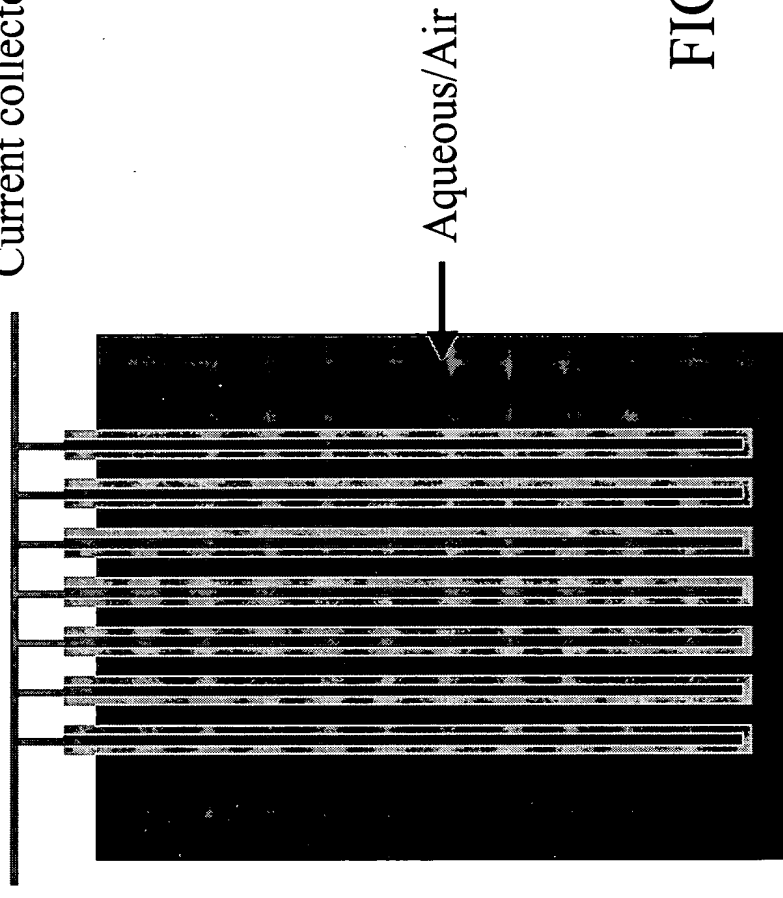


FIG. 15

Protected Li Laminate Electrode

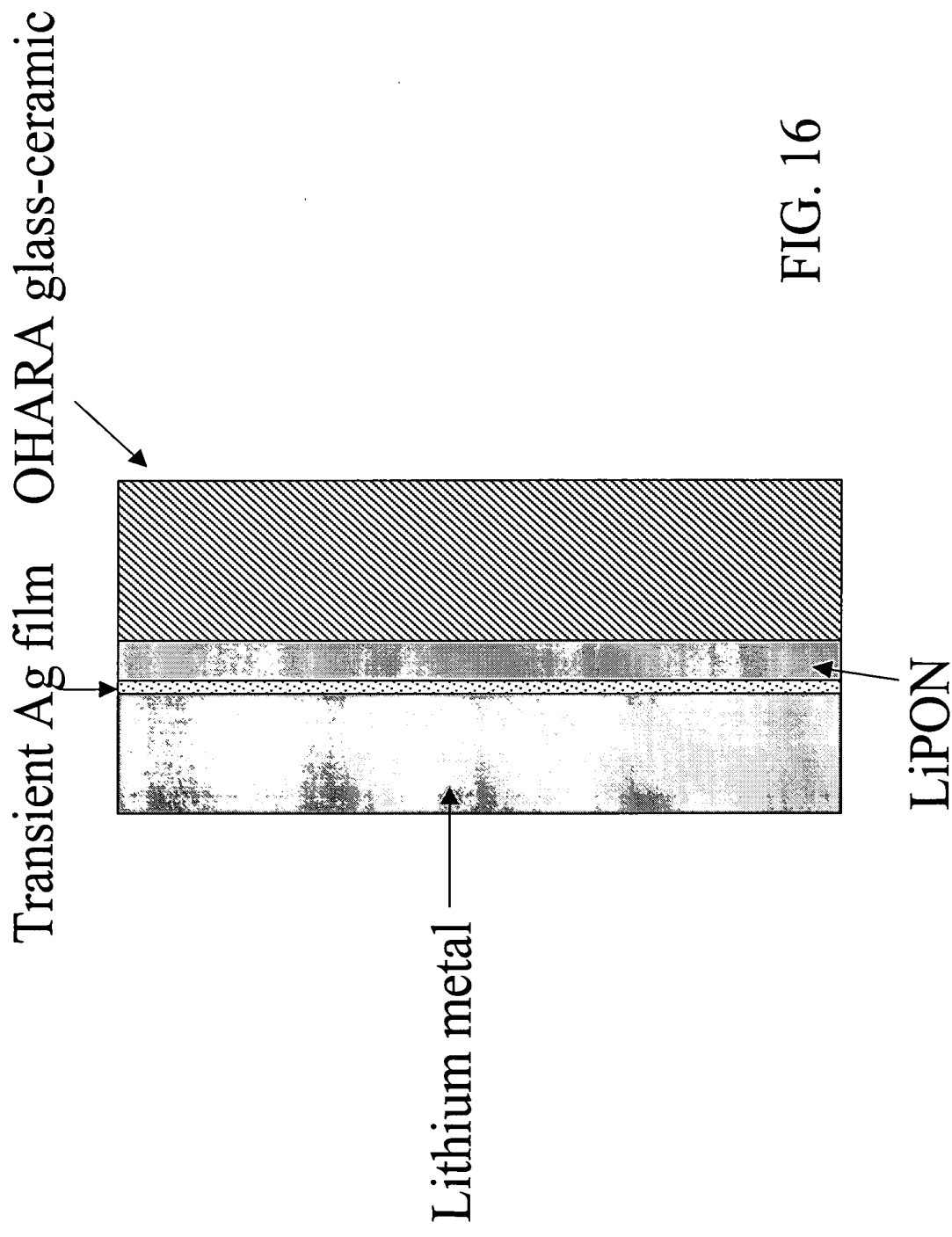


FIG. 16

**Potential – time Curve for Anodic Dissolution of Protected Li
Electrode in 0.5M HCl + 1.0M LiCl, Water Solution**

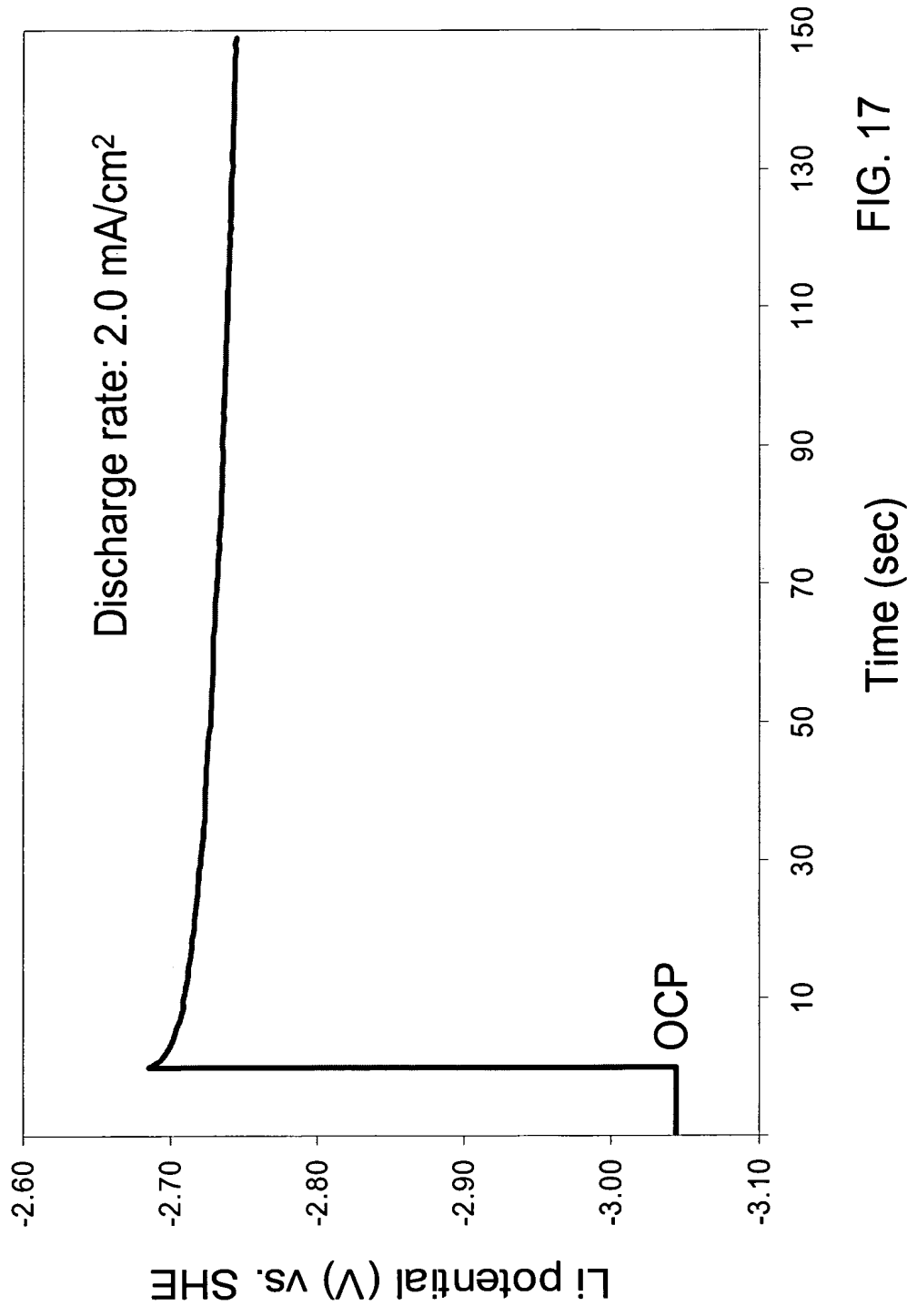


FIG. 17

**Potential – time Curve for H₂ Evolution at Pt Cathode in the Cell with
Li Protected Anode**

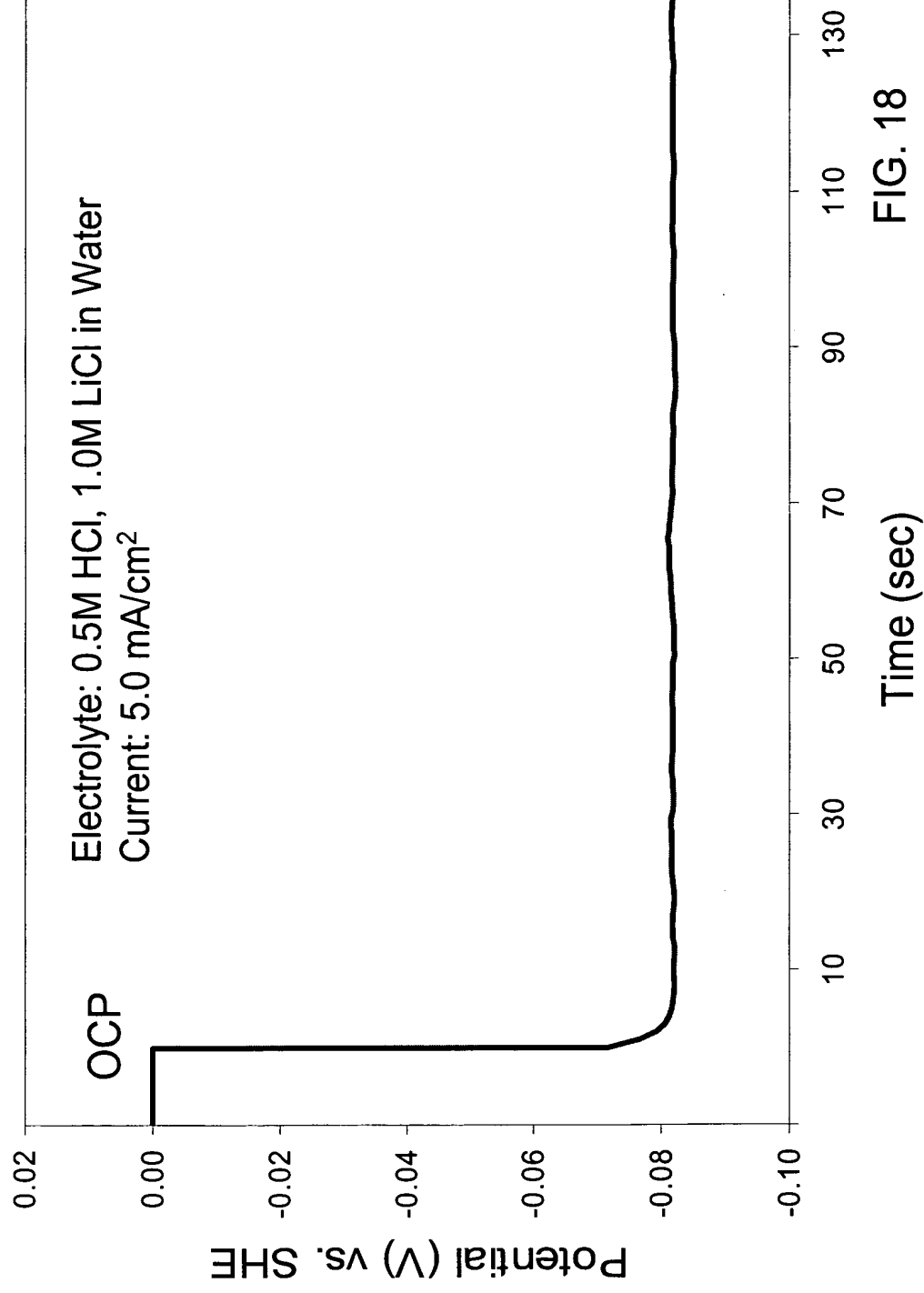


FIG. 18

**Potential – time Curve for Anodic Dissolution of Protected Li
Electrode in 4M LiOH, Water Solution**

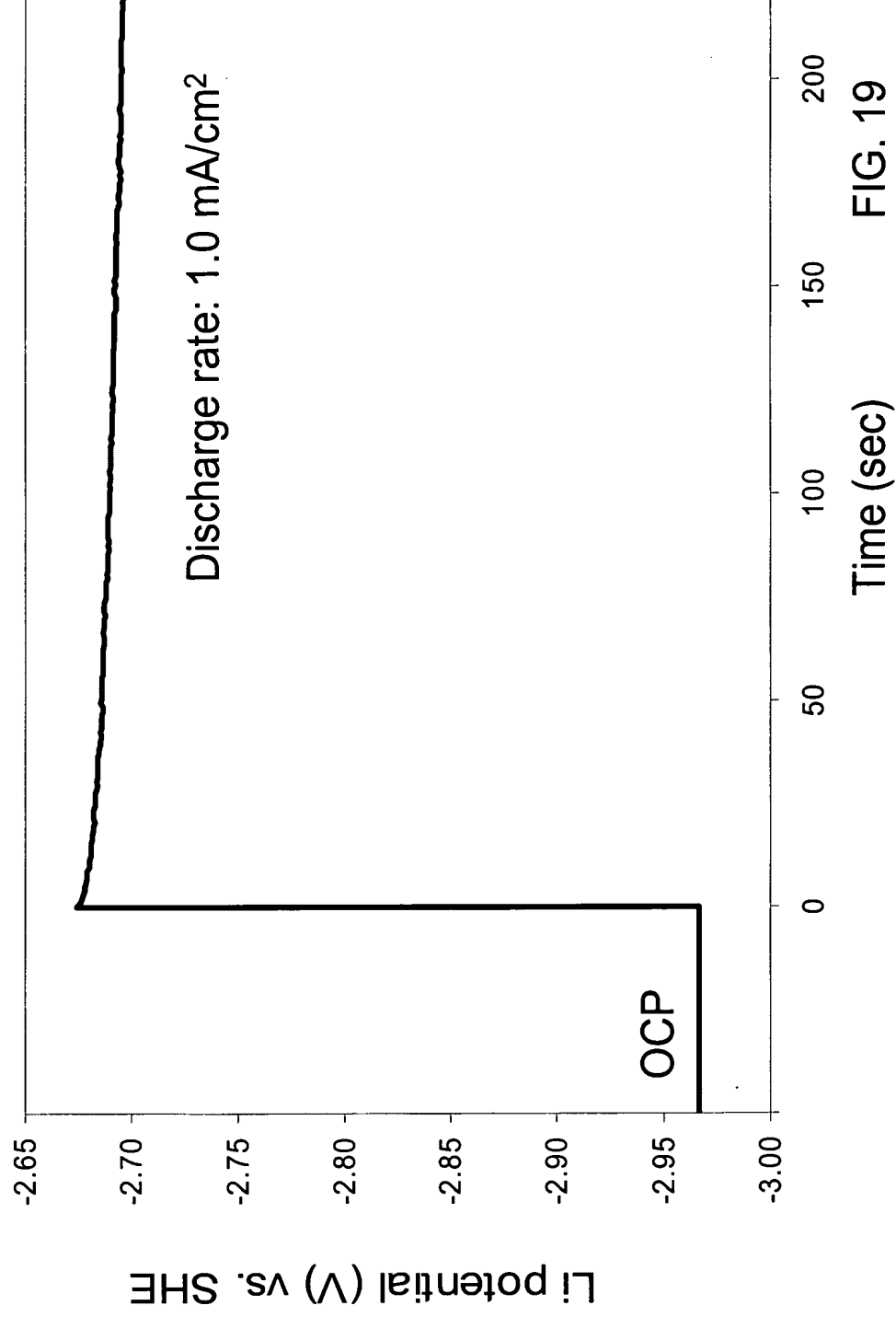
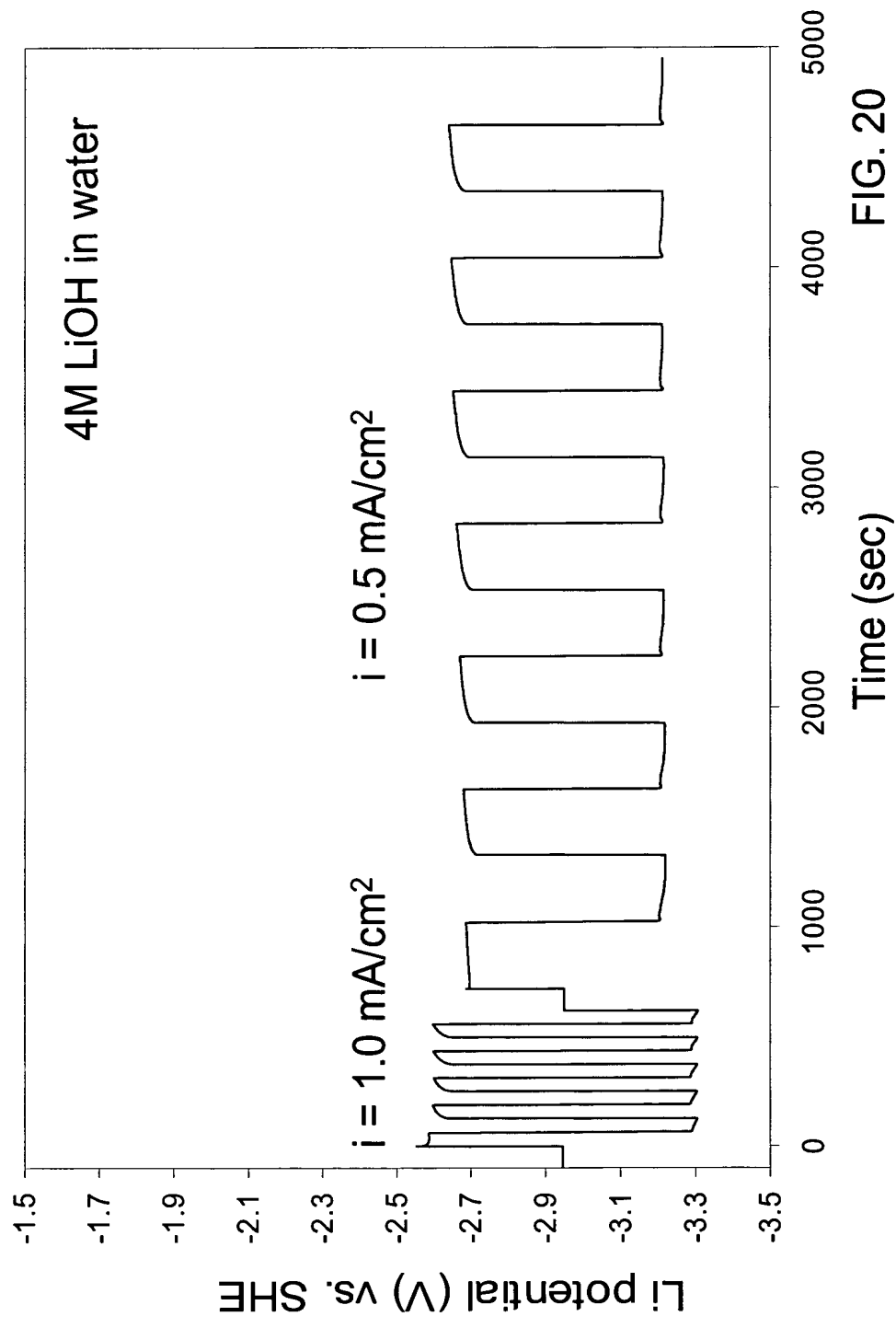


FIG. 19

Cycling of Protected Li Anode in Aqueous Electrolyte



Cycling Performance of Protected Li Electrode in 4M LiOH, Water Solution

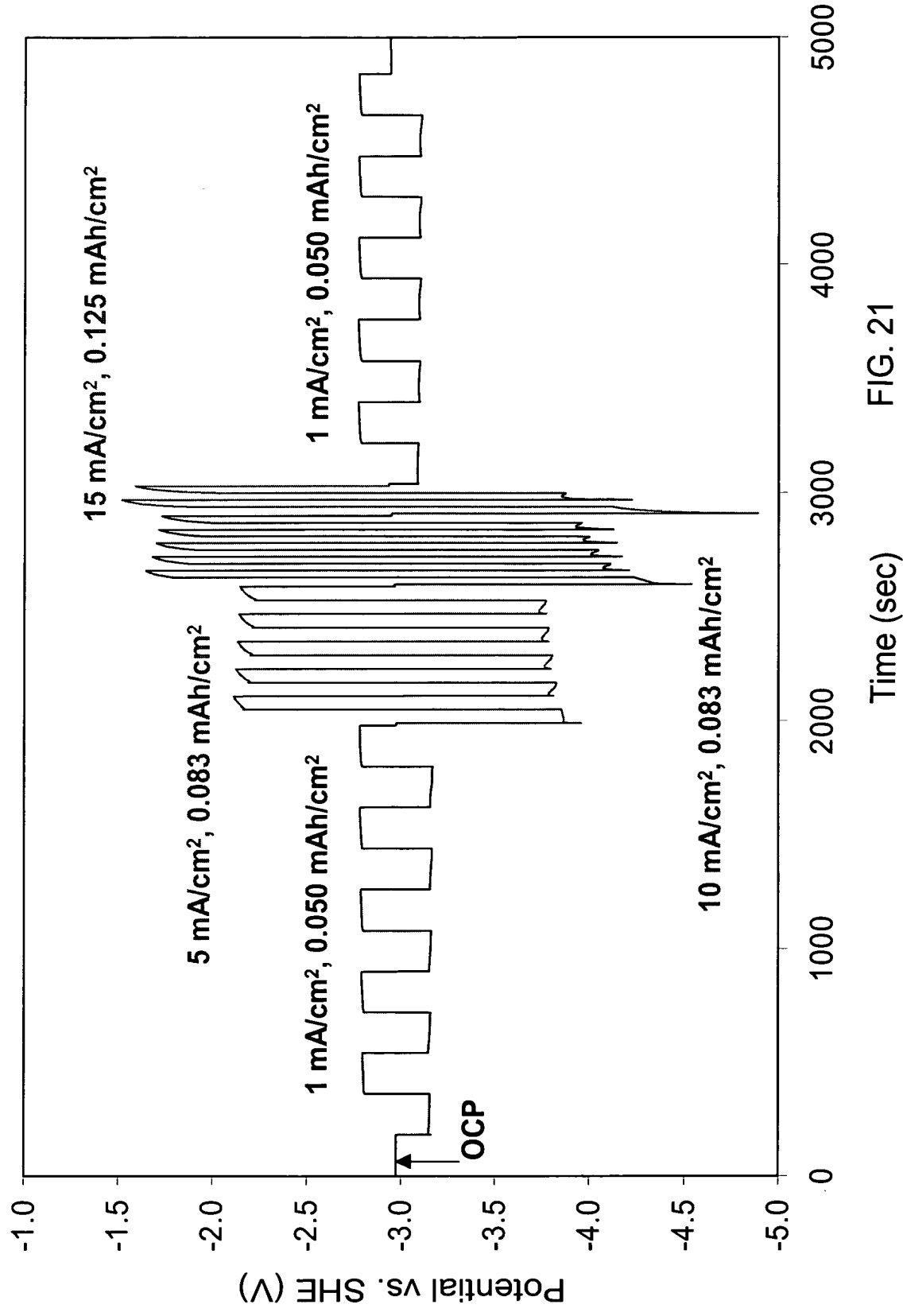


FIG. 21

Potential-time Curve for Anodic Dissolution of Protected Li Electrode in Seawater

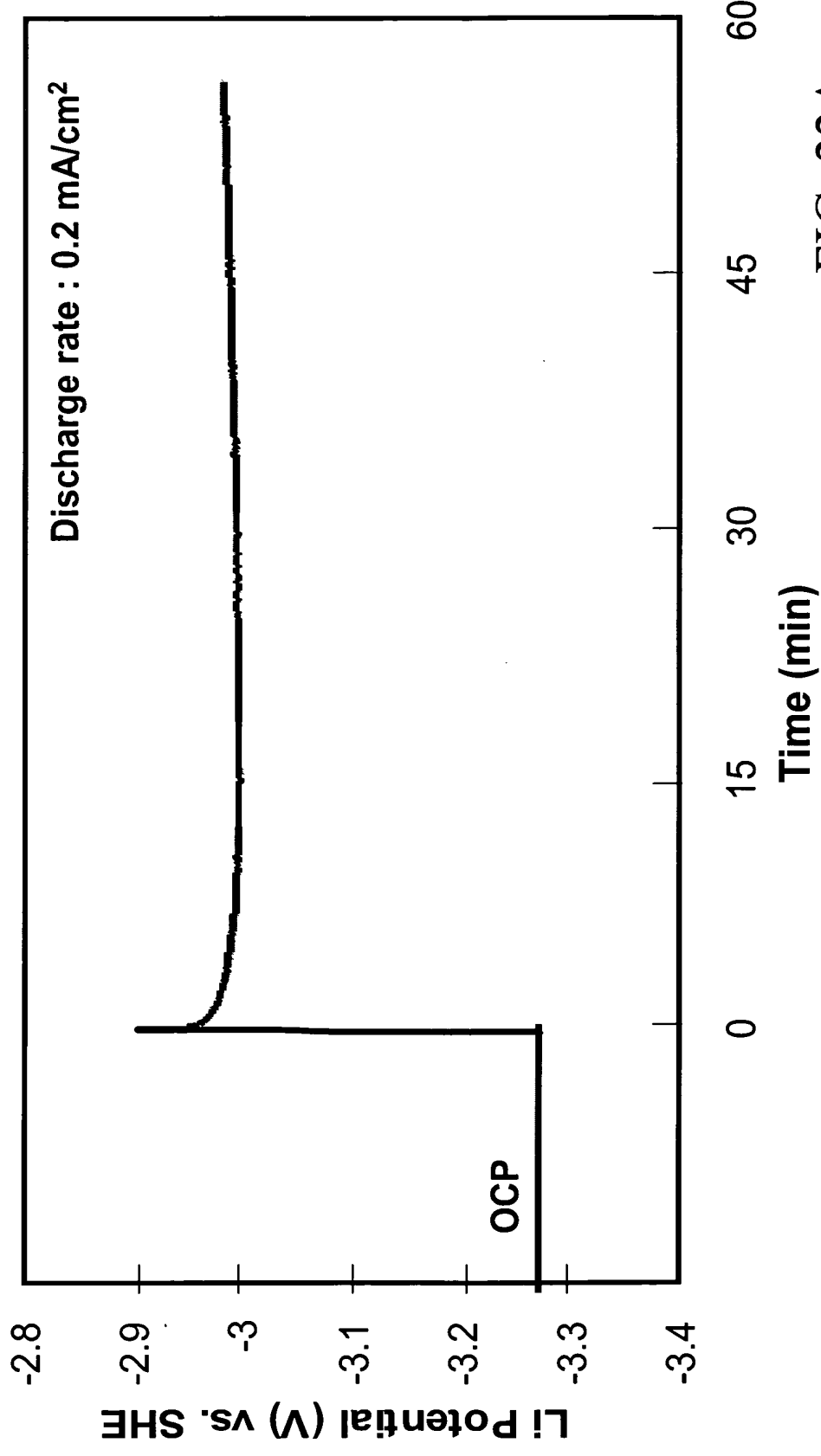


FIG. 22A

Potential-time Curve for Anodic Dissolution of Protected Li Electrode in Seawater

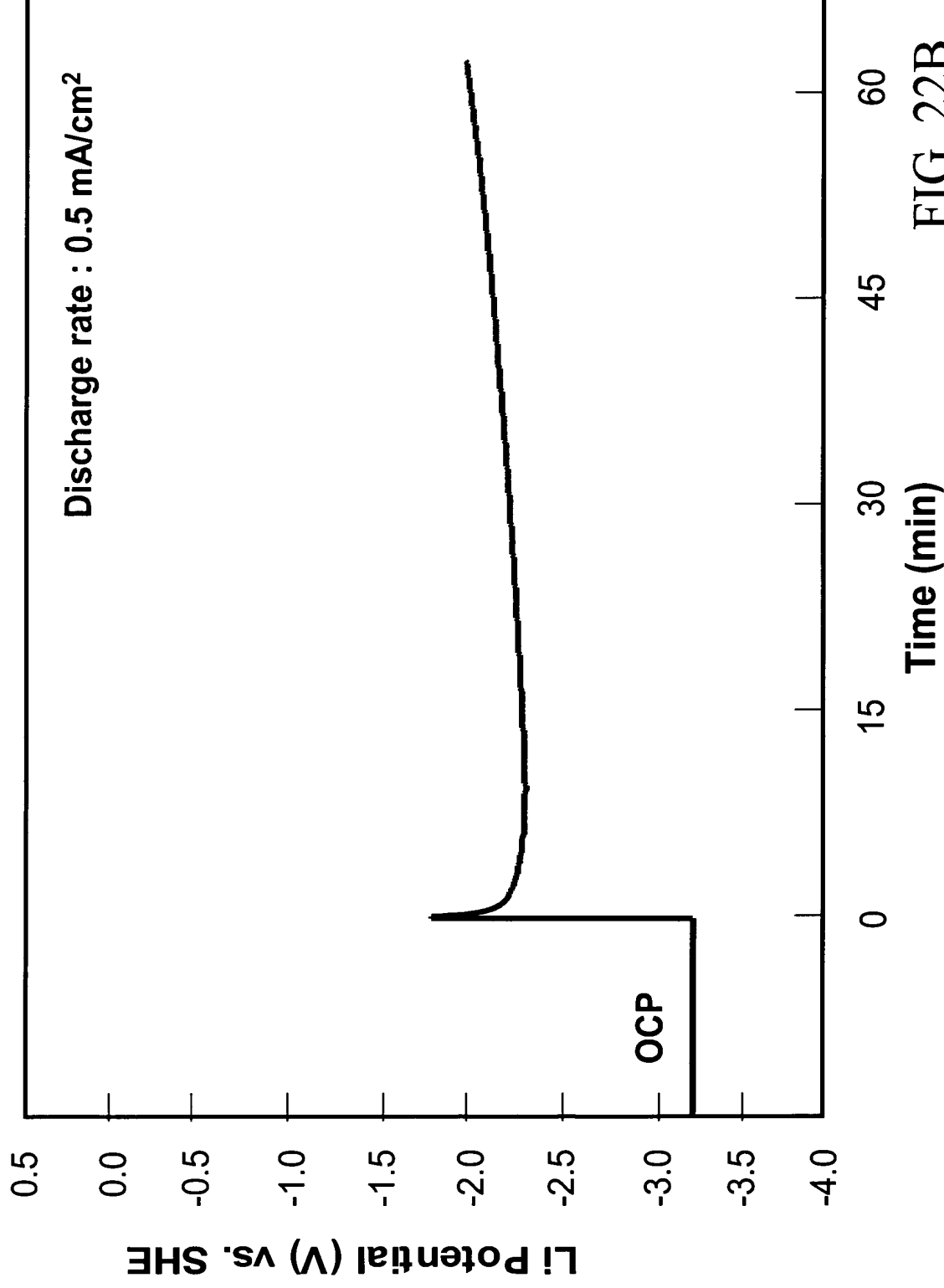
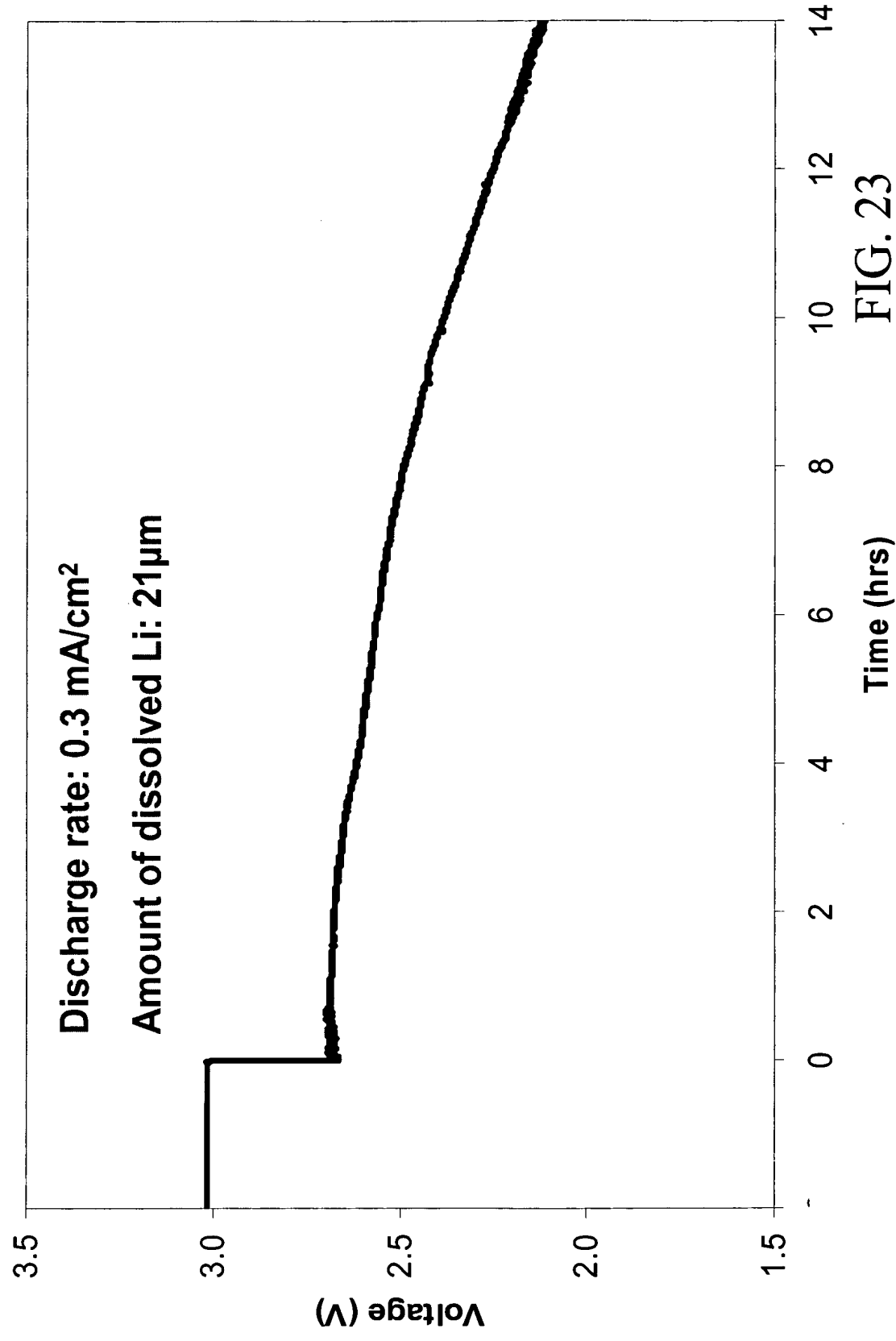


FIG. 22B

Discharge of Li/Seawater Cell with Protected Li Anode and Pt Cathode



**Discharge of Cell with Protected Li Electrode and
Aqueous Electrolyte Containing Hydrogen Peroxide**

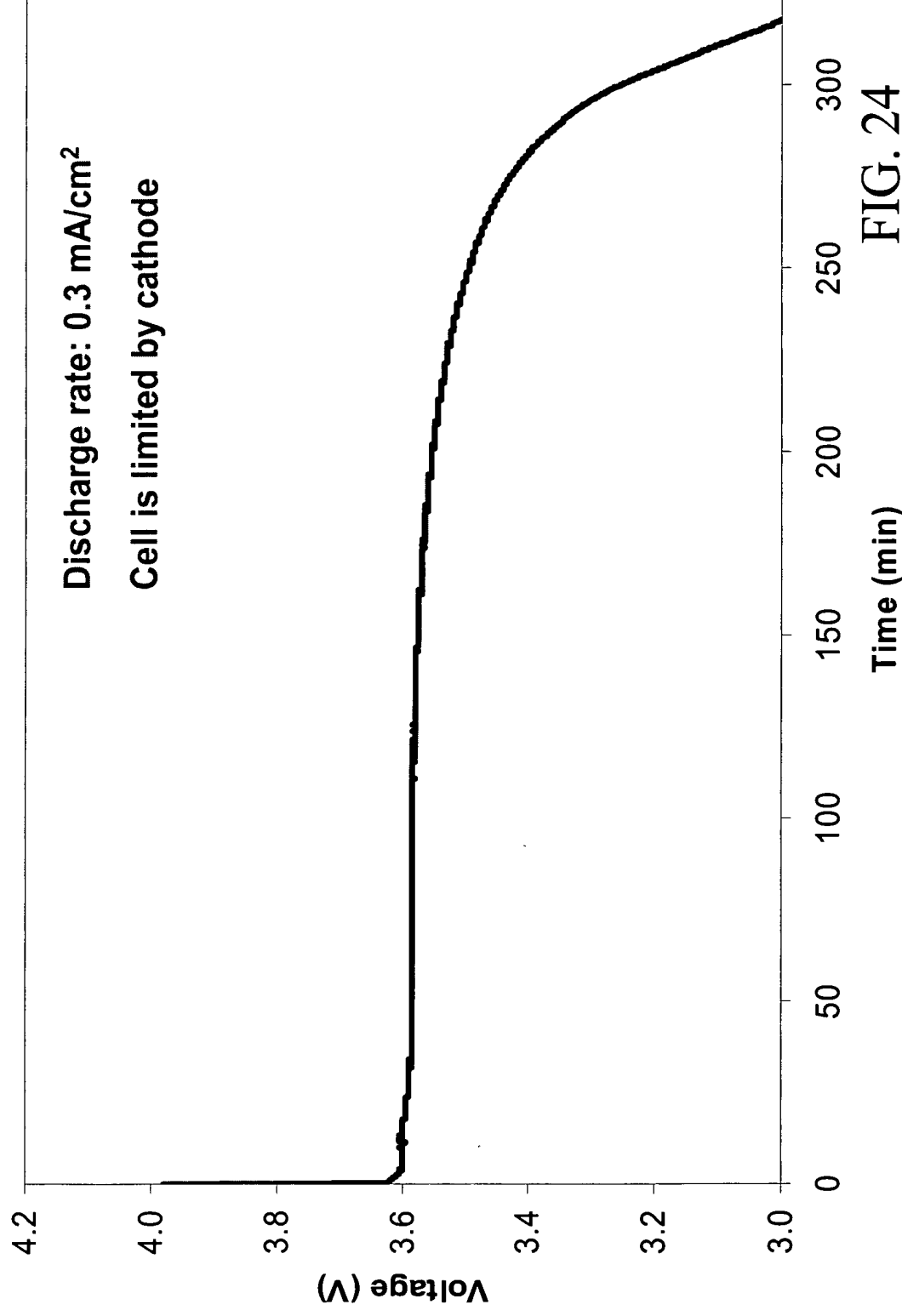


FIG. 24

Discharge of Li/Air Cell with Protected Li Electrode and Neutral Electrolyte

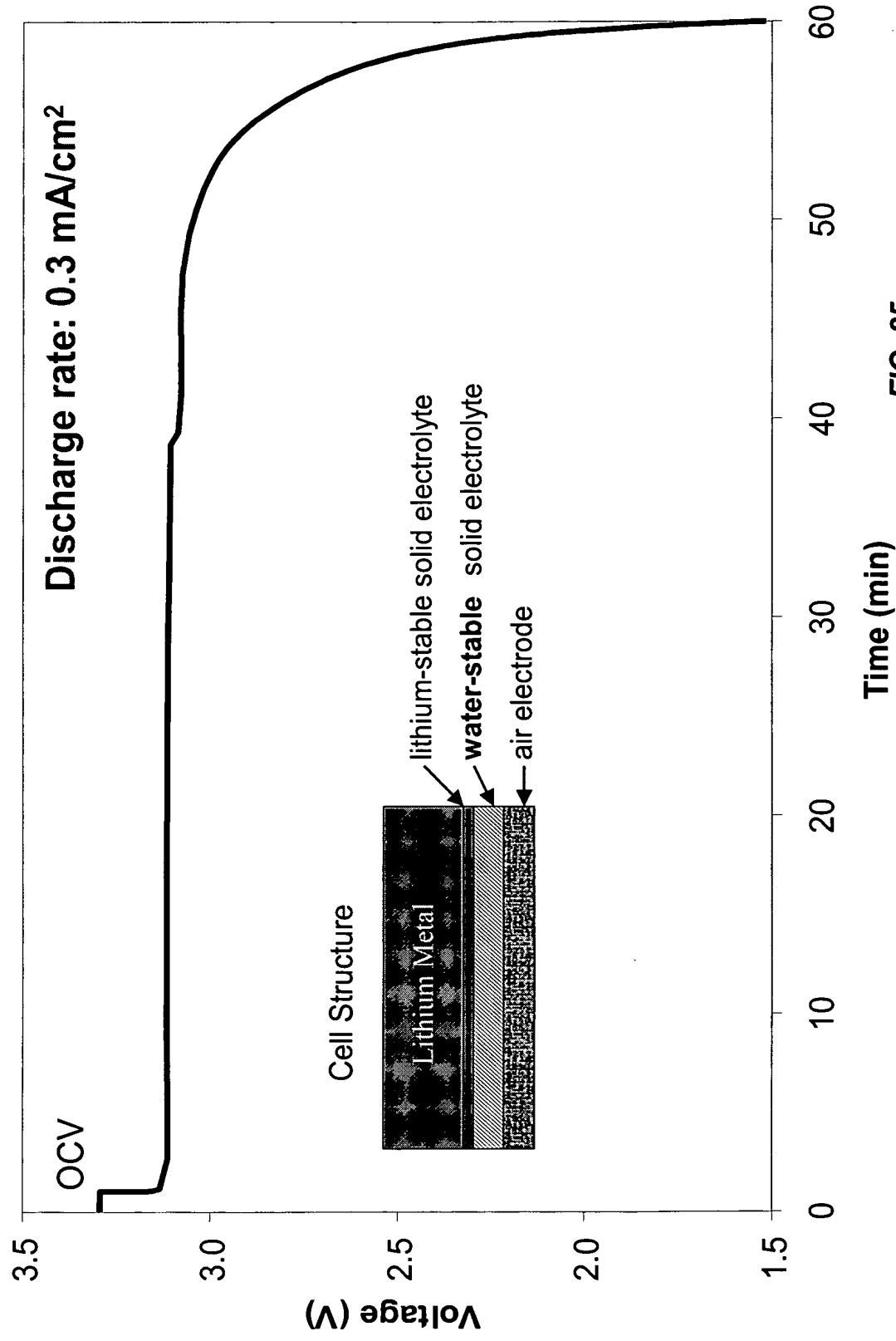
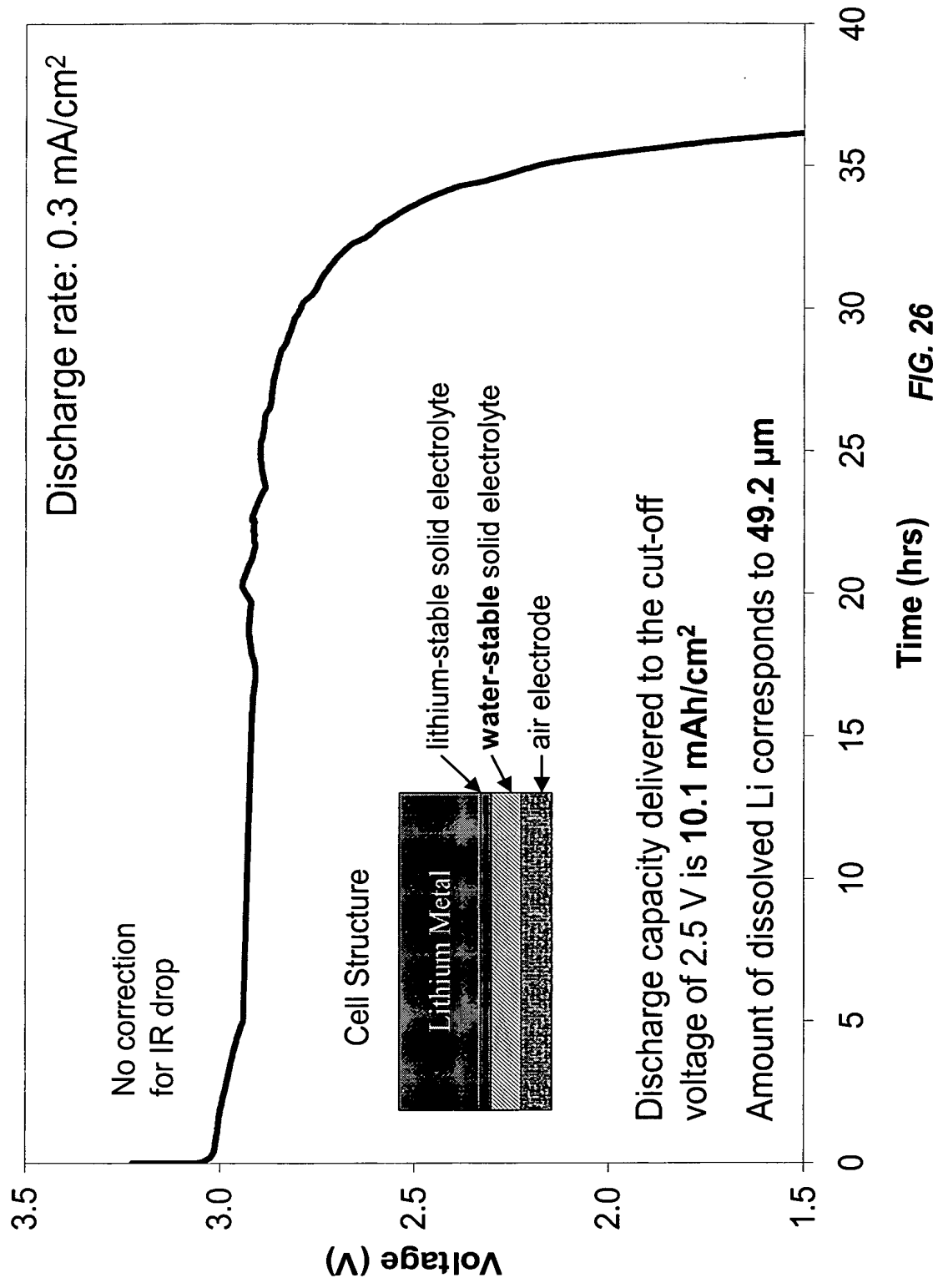


FIG. 25

Discharge of Li/Air cell with Protected Li Electrode



Cycling of Li/Air cell with Protected Li Electrode

Charge/Discharge Rate: 1.0 mA/cm²
Electrolyte: 1 M LiOH

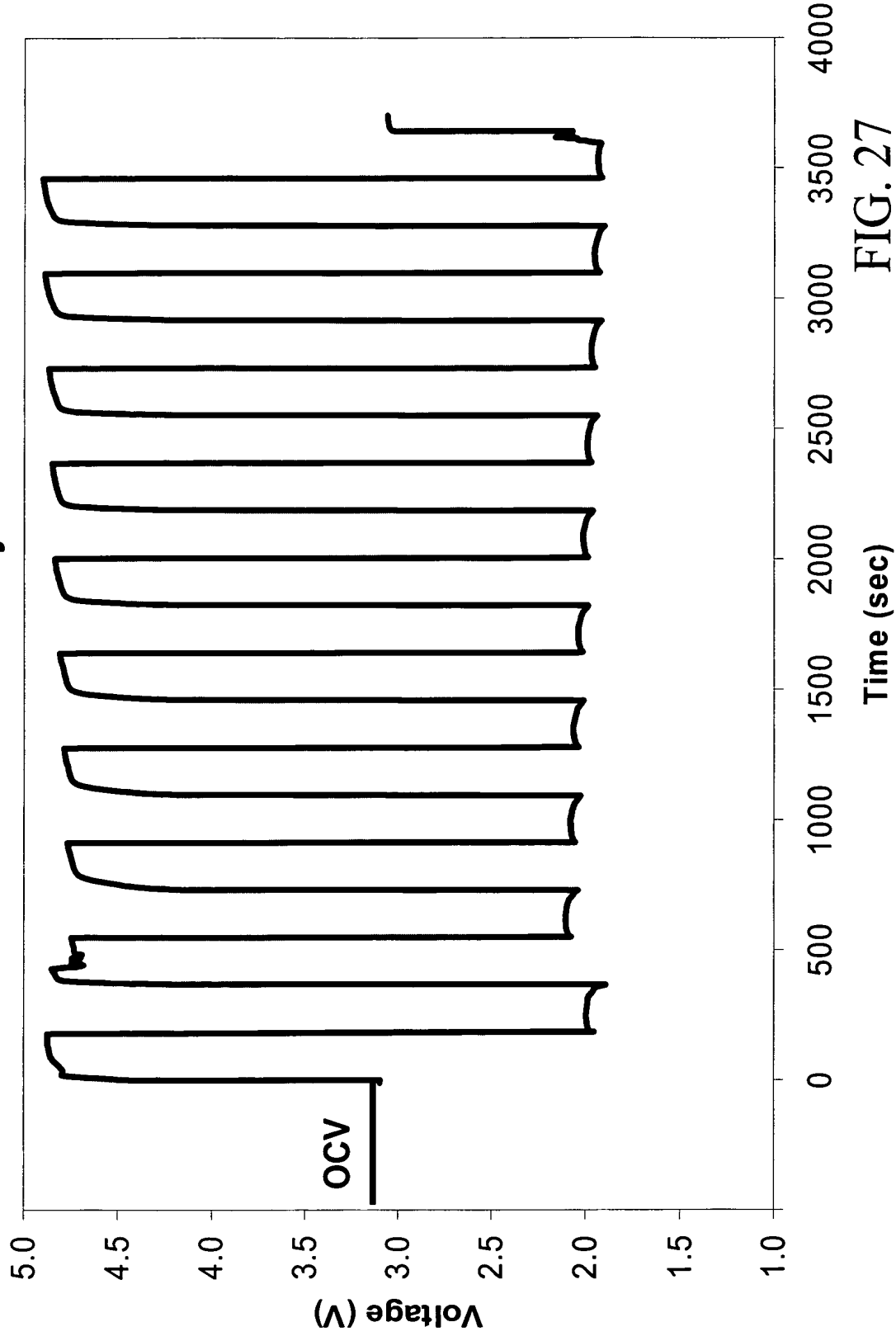


FIG. 27